Technical Report 1305

Junior Leader Training Development in Operational Units

Edmund V. Pax
Northrop Grumman Technical Services

Allison Dyrlund, and Jennifer S. Tucker
U.S. Army Research Institute

April 2012

United States Army Research Institute for the Behavioral and Social Sciences

Report Documentation Page

Form Approved
OMB No. 0704-0188

1. REPORT DATE	2. REPORT TYPE	3. DATES COVERED
APR 2012		**00-06-2010 to 00-08-2011**

4. TITLE AND SUBTITLE	5a. CONTRACT NUMBER
Junior Leader Training Development in Operational Units	5b. GRANT NUMBER
	5c. PROGRAM ELEMENT NUMBER
6. AUTHOR(S)	5d. PROJECT NUMBER
	5e. TASK NUMBER
	5f. WORK UNIT NUMBER
7. PERFORMING ORGANIZATION NAME(S) AND ADDRESS(ES) **Northrop Grumman Technical Services,100 E. Central texas Expressway Suite 200,Killeen,TX,76541**	8. PERFORMING ORGANIZATION REPORT NUMBER
9. SPONSORING/MONITORING AGENCY NAME(S) AND ADDRESS(ES)	10. SPONSOR/MONITOR'S ACRONYM(S)
	11. SPONSOR/MONITOR'S REPORT NUMBER(S)

12. DISTRIBUTION/AVAILABILITY STATEMENT
Approved for public release; distribution unlimited

13. SUPPLEMENTARY NOTES
See also ADM002362.

14. ABSTRACT

15. SUBJECT TERMS

16. SECURITY CLASSIFICATION OF:			17. LIMITATION OF ABSTRACT	18. NUMBER OF PAGES	19a. NAME OF RESPONSIBLE PERSON
a. REPORT	b. ABSTRACT	c. THIS PAGE			
unclassified	**unclassified**	**unclassified**	**Same as Report (SAR)**	**38**	

U.S. Army Research Institute
for the Behavioral and Social Sciences

Department of the Army
Deputy Chief of Staff, G1

Authorized and approved for distribution:

BARBARA A. BLACK, Ph.D.
Research Program Manager
Training and Leader Development
Division

MICHELLE SAMS, Ph.D.
Director

Research accomplished under contract
for the Department of the Army

Northrop Grumman Technical Services

Technical Review by

Jean L. Dyer, U.S. Army Research Institute
Christopher L. Vowels, U.S. Army Research Institute

NOTICES

DISTRIBUTION: Primary distribution of this Technical Report has been made by ARI. Please address correspondence concerning distribution of reports to: U.S. Army Research Institute for the Behavioral and Social Sciences, Attn: DAPE-ARI-ZXM, 6000 6th Street (Bldg. 1464 / Mail Stop: 5610), Fort Belvoir, VA 22060-5610.

FINAL DISPOSITION: This Technical Report may be destroyed when it is no longer needed. Please do not return it to the U.S. Army Research Institute for the Behavioral and Social Sciences.

NOTE: The findings in this Technical Report are not to be construed as an official Department of the Army position, unless so designated by other authorized documents.

REPORT DOCUMENTATION PAGE

1. REPORT DATE (dd-mm-yy)	2. REPORT TYPE	3. DATES COVERED (from . . to)
April 2012	Final	June 2010 – August 2011

4. TITLE AND SUBTITLE

Junior Leader Training Development in Operational Units

5a. CONTRACT OR GRANT NUMBER

W5J9CQ10C0021

5b. PROGRAM ELEMENT NUMBER

622785

6. AUTHOR(S)

Edmund V. Pax (Northrop Grumman), Allison Dyrlund, and Jennifer S. Tucker (U.S. Army Research Institute)

5c. PROJECT NUMBER

A790

5d. TASK NUMBER

370

5e. WORK UNIT NUMBER

7. PERFORMING ORGANIZATION NAME(S) AND ADDRESS(ES)

Northrop Grumman Technical Services
100 E. Central Texas Expressway
Suite 200
Killeen, Texas 76541

U.S. Army Research Institute
6000 6th Street
Fort Belvoir, VA 22060-5610

8. PERFORMING ORGANIZATION REPORT NUMBER

9. SPONSORING/MONITORING AGENCY NAME(S) AND ADDRESS(ES)

U.S. Army Research Institute for the Behavioral and Social Sciences
ATTN: DAPE-ARI
6000 6th Street (Bldg 1464 / Mail Stop: 5610)
Fort Belvoir, VA 22060-5610

10. MONITOR ACRONYM

ARI

11. MONITOR REPORT NUMBER

Technical Report 1305

12. DISTRIBUTION/AVAILABILITY STATEMENT

Approved for public release; distribution is unlimited.

13. SUPPLEMENTARY NOTES

Contracting Officer's Representative and Subject Matter POC: Dr. Jennifer S. Tucker

14. ABSTRACT *(Maximum 200 words)*:

The Junior Leader Training Development Tool (JLTDT) was created to instruct junior leaders in the processes of training development and provide training development job aids to assist in developing effective training products. The development of the JLTDT was based on a comprehensive literature review and subject matter expert feedback from U.S. Army Forces Command (FORSCOM) units and U.S. Army Training and Doctrine Command (TRADOC) agencies. The JLTDT is an interactive training development tool that consists of a central database of training resources and training plans posted by junior leaders and a checklist of training development steps seen in the 8-Step Training Model. This report documents the process that was used to develop the JLTDT as well as the application of the tool (Appendix A). The prototype tool was coordinated with the Army Training Network (ATN), and ATN website developers incorporated some of its content into the ATN website. A CD is enclosed with the source code for the prototype tool. The source code is written in Visual Studios 2008. The CD also includes the back-up files, images, and links to the various job aids in the tool.

15. SUBJECT TERMS

junior leader development, training development, 8-step training model, operational units, training job aids

SECURITY CLASSIFICATION OF			19. LIMITATION ABSTRACT	20. NUMBER OF PAGES	21. RESPONSIBLE
16. REPORT	17. ABSTRACT	18. THIS PAGE			
Unclassified	Unclassified	Unclassified	Unlimited	38	Ellen Kinzer Technical Publication Specialist 703-545-4225

Technical Report 1305

Junior Leader Training Development in Operational Units

Edmund V. Pax
Northrop Grumman Technical Services

Allison Dyrlund, and Jennifer S. Tucker
U.S. Army Research Institute

Fort Hood Research Unit
Scott B. Shadrick, Chief

U.S. Army Research Institute for the Behavioral and Social Sciences
6000 6th Street, Bldg. 1464
Fort Belvoir, VA 22060

April 2012

Army Project Number
622785A790

Personnel, Performance and Training Technology

ACKNOWLEDGEMENTS

The authors are indebted to members of the Collective Training Directorate at Fort Leavenworth, notably Ron Coaxum, Harold Summerfelt, Charlie Ostrand, and Bill Brosnan, who provided information regarding the Army Training Network (ATN), Combined Arms Training Strategy (CATS), Digital Training Management System (DTMS), and training development among junior leaders. Mark Lahan at G3, 1ID, Fort Riley supported the effort with Soldiers who provided candid comments regarding training development processes used by junior leaders. The authors gained valuable feedback from Jimmy Davis, Bill Brosnan, and Joel Young from the ATN Section of the Collective Training Directorate. Their feedback proved immeasurable in the development of the Junior Leader Training Development Tool and its practicality to junior leaders. The Junior Leader Training Development Tool came to fruition by the diligent work of Hershel Pearl, Scott Graham, Leticia Cannon, and James Crandell. Their creativity and expertise are directly reflected in the tool. The authors are grateful to SFC Bolen, CPT Crump, and SGM Haddix, 199th IN BDE, Fort Benning, Georgia, for their assistance in arranging for Army leaders to review and provide feedback on the Junior Leader Training Development Tool. Lastly, the authors are grateful for the officers and noncommissioned officers who graciously gave their time to participate in this project. Their feedback greatly enhanced the usability of the tool.

JUNIOR LEADER TRAINING DEVELOPMENT IN OPERATIONAL UNITS

EXECUTIVE SUMMARY

Research Requirement:

Junior leaders in the US Army face complex operational environments that drive how units train in the years ahead. The daunting training challenges are compounded by a fast-paced operational tempo and the subsequent pressures inherent in the Army force generation (ARFORGEN) cycles. Various government organizations have developed innovative training development interventions to mitigate the challenges faced by junior leaders, who hold the rank of Staff Sergeant (E6) to Captain (03). Applicable training development products and computer-based technologies offer promising solutions. Technical training development products and resources include mission essential task lists (METL), collective task lists, Combined Arms Training Strategy (CATS), and the Digital Training Management System (DTMS). While work has been done to mitigate the training development challenges experienced by junior leaders, there still exists a developmental need in the abilities of junior leaders to develop training in today's operational tempo. Consequently, a prototype tool that instructs junior leaders in the processes of training development for individual and collective training tasks, and provides training development job aids to assist in developing effective training products. The goal of this research project was to develop a detailed understanding of training development in operational units at the Brigade Combat Team (BCT) level.

Procedure:

A front end analysis was performed that included a literature review for training development in operational units and a series of interviews and focus groups with 29 subject matter experts (SME) from both operational U.S. Army Forces Command (FORSCOM) units and U.S. Army Training and Doctrine Command (TRADOC) agencies. Results of the literature review and focus groups were used to guide the development of a tool to assist junior leaders in developing effective training. The resulting product, called the Junior Leader Training Development Tool (JLTDT), was transitioned to the Army Training Network (ATN). Formative evaluations of the JLTDT were conducted at Fort Leavenworth, Kansas, and Fort Benning, Georgia.

Findings:

The JLTDT was built around six instructional modules comprising four interactive and two informative links. The main module consists of an interactive tool that follows the 8-Step Training Model. Other supporting modules consist of a central database of training resources and planning tools, a training archive of best-practices programs, and several training development training aids that are downloadable and printable. The focal training development process in the JLTDT is the 8-Step Training Model, with supporting training development processes described in the Analysis, Design, Development, Implementation, Evaluation (ADDIE) Model, Military Decision-Making Process (MDMP) Model, and Troop Leading

Procedures. The doctrinal foundation for the JLTDT is found in FM 7-0, *Training Units and Developing Leaders for Full Spectrum Operations*.

Utilization and Dissemination of Findings:

The JLTDT is an interactive training development tool that consists of a central database of training resources and training plans posted by junior leaders and a checklist of training development steps seen in the 8-Step Training Model. The intent of the JLTDT was that it could be a "living" tool with resource links and training plans constantly updated and added to the tool's database. The focus of the JLTDT is with operational units at the Brigade Combat Team (BCT) level, and the tool applies to junior Army leaders ranging from staff sergeant (E6) to captain (O3). The duty positions that can most benefit from the JLTDT include military occupational specialties in the areas of operations, training management, and training development. The prototype tool was coordinated with the ATN (https://atn.army.mil) and the ATN website developers incorporated some of its content into the ATN website. Details of the use and application of the prototype tool can be found in Appendix A. A CD is enclosed with the source code for the prototype tool. The source code is written in Visuals Studios 2008. The CD also includes the back-up files, images, and links to the various job aids in the tool.

JUNIOR LEADER TRAINING DEVELOPMENT IN OPERATIONAL UNITS

CONTENTS

LIST OF TABLES

LIST OF FIGURES

JUNIOR LEADER TRAINING DEVELOPMENT IN OPERATIONAL UNITS

Successful operational units do not arise without tough, realistic, and challenging training. Field Manual (FM) 7-0, *Training Units and Developing Leaders for Full Spectrum Operations*, emphasizes that, "The Army trains Soldiers and units daily in individual and collective tasks under challenging, realistic conditions, and training continues in deployed units to sustain skills and adapt to changes in the operational environment" (U.S. Department of the Army, 2011a, p. 1-5). Operational units in the Army face growing challenges in developing training needed for full spectrum operations, in light of demanding time schedules and ever-changing environments. Junior leaders in operational units, ranging from noncommissioned officers (NCO) to company-grade officers, may face several training development challenges such as; requirements to develop training outside of their areas of competency, restricted access to needed training resources, and time constraints which prohibit extensive searching for training resources. In addition, junior leaders have not had the same level of experience developing quality training as previous generations due to the increased operational tempo. Therefore, research on effective training development methods for junior leaders is needed.

Background

The objective of the present research was to understand training development in operational units at the Brigade Combat Team (BCT) level and develop a tool that junior leaders in operational units could use as a resource when faced with the aforementioned training development difficulties. A critical need persists for research on the actual development of training programs. That is, leaders at the Brigade Combat Team (BCT) level indicated that many junior leaders and NCOs are not as experienced or proficient in developing quality training as previous generations of Army personnel once were (Dempsey, 2009). General Dempsey further asserted that training scenarios, plans, and exercises should be done in the context of complex human terrain and hybrid threats, and that training should address the competing demands of offense, defense, and stability operations (Dempsey, 2009).

The goal of this research was to develop a useful way to instruct and guide leaders and Soldiers on developing training products and materials to meet their units' training objectives. The research resulted in the development of a prototype tool that can be used by Army leaders to insure their personnel can develop quality instruction, training, and performance measurement systems. The technical report describes the results of the literature review and interviews, the design of the prototype tool, formative evaluation of the prototype tool and the refinements executed in response to the evaluation. Furthermore, lessons learned and recommendations are discussed not only in terms of the development of the training materials in this research, but also in terms of future research and development of follow-on training development tools.

Technical Objectives

Junior leaders in the U.S. Army face complex operational environments that drive how units train in the years ahead (Chiarelli, 2009). The daunting training challenges are compounded by a fast-paced operational tempo and the subsequent pressures inherent in the

Army force generation (ARFORGEN) cycles. Various government organizations have developed innovative training development interventions to mitigate the challenges faced by junior leaders. Applicable training development products and computer-based technologies offer promising solutions. Technical training development products and resources include mission essential task lists (METL), collective task lists, combined arms training strategies (CATS), and the Digital Training Management System (DTMS). Consequently, the goal of this research is to determine the most effective way to instruct leaders and Soldiers on developing training products and materials. This research has four objectives:

- Review and analyze relevant Army doctrine, training, training literature, and other sources to determine the content for and approach to instructing leaders and Soldiers on training development methods and techniques in the operational unit domain,
- Design training to instruct junior leaders and Soldiers in operational units on effective training development methods and techniques,
- Develop training to instruct junior leaders and Soldiers in operational units how to develop effective training in the operational unit domain, and
- Document findings and lessons learned from the data collection effort.

In an effort to meet the technical objectives, a front end analysis was performed. The front end analysis was comprised of two major tasks, which included a review of pertinent literature for training development in operational units and a series of interviews and focus groups with subject matter experts (SME).

Method

Literature Review

The purpose of the literature review was to determine the content for and approach to instructing junior leaders and Soldiers on training development methods and techniques in the operational unit domain. Specific topics in the literature review included training development background material, methods, and models. Consequently, results for these topics are reported from military and academic training publications, training development enablers, and training development websites. The base documents included:

- TRADOC Pamphlet 525-8-3, The U.S. Army Training Concept, 2012-2020,
- FM 7-0, *Training Units and Developing Leaders for Full Spectrum Operations*,
- TRADOC Regulation 350-70, Systems Approach to Training Management, Processes, and Products (Superseded in 2009 with Army Training and Education Development: Management, Processes, Products, and Delivery),
- Army Regulation 350-1, Army Training and Leader Development,

- Army in Europe (AE) Regulation 350-1, Training in the Army in Europe, and
- Various articles in the American Society for Training Development (ASTD) Training and Development (T&D) Journal.

The training development models and methods described in the various base documents were used to develop the prototype training development tool in this research project. The training development models and methods included the:

- Systems Approach to Training (SAT) including the Analysis, Design, Development, Implementation, Evaluation (ADDIE) model (TRADOC Regulation 350-70, 1999; U.S. Department of the Army Regulation (AR) 350-1, 2009),
- Army Training Management Model (Plan Prepare, Execute, and Assess) in FM 7-0 (U.S. Department of the Army, 2011a),
- Military Decision Making Process (MDMP) in FM 5-0 (U.S. Department of the Army, 2010), and the
- 8-Step Training Model in FM 7-0 and AE Regulation 350-1 (U.S. Department of the Army, 2011a; U.S. Department of the Army Europe and the Seventh Army, 2005).

The training development drivers and enablers were primarily discovered in training websites, which included the:

- Digital Training Management System (DTMS),
- Combined Arms Training Strategy (CATS), and the
- Army Training Network (ATN).

Interviews/Focus Groups

The purpose of the interviews/focus groups was to develop a broad understanding of training content development, management, implementation, and assessment in the operational domain. Moreover, the purpose was to uncover effective training development tactics, techniques and procedures (TTP), gained from exemplar training development products used by junior leaders in operational units. In turn, the training development TTP could be modified as necessary and used as exemplar products for training.

Participants. The participants in the interviews and focus groups were personnel from agencies in the U.S. Army Training and Doctrine Command (TRADOC) and operational units in the U.S. Army Forces Command (FORSCOM). To ensure generalizability of findings across the operational units in the U.S. Army, the participants had varied backgrounds, time in service and experience levels regarding training development. Overall, the interviews consisted of 29

civilian and military personnel, with a mean of 13.76 years in service and 22.45 months of time in training development positions (Table 1).

Table 1

Interview and Focus Group Participant Demographics

Participants (%) (N = 29)	Rank (%)	Average Months in Duty Position	Average Years in Service	Military Occupational Specialty (MOS)/Organization
Officer (13.9%)	CPT (6.9%) 1LT (3.5%) 2LT (3.5%)	5.75	3.38	11A: Infantry Officer (1) 35D: All Source Intelligence (1) 74A: Chemical Officer (1) 91A: M-1 Abrams Tank System Maintainer (1) 11B: Infantryman (3) 13D: Field Artillery Automated Tactical Data Systems Specialist (2) 15P: Aviation Operations Specialist (1) 15T: UH-60 Helicopter Repairer (1) 25B: Information Technology Specialist (1) 25U: Signal Support Systems Specialist (1) 91B: Wheeled Vehicle Mechanic (2) 91D: Power Generation Equipment Repairer (1) 91X: Maintenance Supervisor (1) 91Z: Mechanical Maintenance Supervisor (1) 92F: Petroleum Supply Specialist (2) 92S: Shower/Laundry and Clothing Repair Specialist (1) 92Y: Unit Supply Specialist (1) 94W: Electronics Maintenance Chief (1) G3 Mission Support Element (MSE) (1) Army Training Network (ATN) (1) Collective Training Directorate (1) Combined Arms Training Strategy (CATS) (1) Digital Training Management System (DTMS) (1) Center for Army Leadership (CAL) (1)
Enlisted (65.4%)	SSG (31.0%) SFC (20.6%) MSG (6.9%) SGT (6.9%)	18.53	13.76	
Civilian/ Contractor (20.7%)	GS-13 (10.3%) GS-14 (6.9%) N/A (3.5%)	46.00	20.67	
Overall	100%	22.45	13.76	

Measures. The interview protocol began with a series of background questions that established the demographic characteristics of the sample. The background questions were followed by an introductory briefing that described the purpose of the research project, the purposes for the interviews, and key end state results and points of contact for the research project.

The TRADOC Subject Matter Expert (SME) questions were divided into five sections:

- Background questions (demographics and type of training development instruction),

- Training requirements and resourcing impact on training development,
- Training development methods and evaluation,
- Challenges inherent in training development in operational units, and
- Ideas of exemplar TTP for training development in operational units.

The focus group questions were divided into six sections:

- Background questions (demographics and type of training development instruction),
- Unit training requirements and resourcing,
- Unit training products needed and produced (training development),
- Unit training development assessment (evaluation processes),
- Unit training development implementation and management (training delivery), and
- Unit training development exemplar TTP, products and feedback.

All participants were first asked to define training development and training management.

Results and Discussion

Literature Review Results

The results of the literature review revealed various publications and websites that are currently available to junior leaders to help them develop training for operational units. Specifically, the results revealed the training development models and methods currently employed in military operational units. The focal method included the structure of the SAT, supported by the ADDIE model. The development of the Automated Systems Approach to Training (ASAT) provided a database of individual and collective tasks used primarily at TRADOC organizations to develop lesson plans and training support packages. The Systems Approach to Training has progressed through various iterations of application and has given rise to TRADOC Pamphlet 525-8-3, The U.S. Army Training Concept (U.S. Department of the Army, 2011b). The TRADOC Pamphlet 525-8-3 conceptually describes training development and it addresses two topics pertinent to the current project. First, the Army must change the way it trains to meet ARFORGEN readiness objectives to conduct full-spectrum operations in future operational environments in the years 2012 to 2020. Secondly, the Army should afford commanders and leaders with capabilities to enable them to execute ARFORGEN-based training plans needed to generate and keep full-spectrum operations trained units (U.S. Department of the Army, 2011). Given what is conceptually derived versus what is realistically driving training development in the Army today, research is needed to determine what is available for junior leaders which allow them to plan, prepare, and execute effective training in their units.

One of the integral textual products available to junior leaders for their training development is FM 7-0, *Training Units and Developing Leaders for Full Spectrum Operations* (U.S. Department of the Army, 2011a). It is the keystone doctrine for training, which addresses the fundamentals of training modular, expeditionary Army forces conducting full-spectrum operations. The manual provides junior leaders with guidance on how to conduct training and training management. Of particular importance is the definition of training management found in the third chapter. It defines training management as a process that includes "sufficient planning, quality preparation, disciplined execution, relevant assessment, and continuous leader involvement" (U.S. Department of the Army, 2011a, p. 3-1). The Army's training management model, derived from this definition, consists of plan, prepare, execute, and assess. This training development approach entails a process whereby senior leaders provide training focus, direction, and resources. Subordinate leaders then develop training objectives and requirements specific to their organization. Guidance, based on training mission and priorities, flows from the top down and results in an identification of collective and individual tasks to support training. Input from the bottom up is essential to identify needed training to achieve task proficiency aligned to the unit's training mission and requirements (U.S. Department of the Army, 2011a).

The SAT process bases its tenants in TRADOC Regulation 350-70, Systems Approach to Training Management, Processes, and Products (TRADOC,1999), and training development in all training domains aligns with this process. The TRADOC Regulation 350-70 is the Army's regulation that directs operational processes for developing, managing, and assuring the quality of collective, individual, and self-development training and education (TRADOC, 1999). Moreover, the ADDIE process is described in TRADOC Regulation 350-70, Army Training and Education Development: Management, Processes, Products, and Delivery (TRADOC, 2009). This TRADOC regulation refined the SAT process and brought training development into a systematic, non-linear, ongoing process for conceiving, planning, organizing, and documenting training and education products. The ADDIE process relates operational unit training development efforts with the ARFORGEN reset and train phases, leading to an operational ready force (TRADOC, 2009).

Under ADDIE, the analysis phase seeks to determine the need for training, who gets the training, and what wartime collective and individual tasks are necessary. In the design phase, the process continues to determine when, where, and how the training takes place, and it describes the training resource requirements. The next phase includes the development phase. In this phase training products and material are produced to facilitate the training at hand. An effective development phase leads to the implementation phase of ADDIE. The implementation phase drives the execution of training to a set standard. The last phase in ADDIE is the evaluation phase which determines how well the training occurred. It was discovered in the literature review that the ADDIE process aligned well with the Army Training Management Model (Figure 1). The major phases of each training development model fell in line with each other as a training event or product went from inception to implementation.

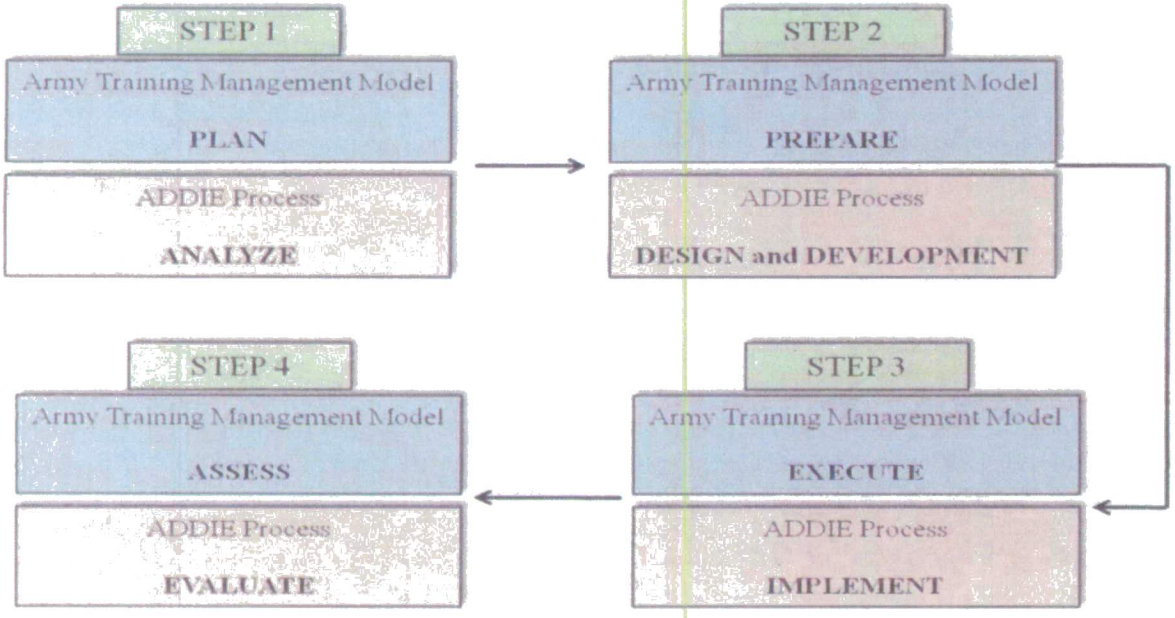

Figure 1. Relationship between ADDIE and the Army Training Management Model.

The Army Training Management Model and ADDIE process appear in TRADOC PAM 350-70 (1999). Consequently, both training development models follow four ongoing steps, in that Step 1, Planning and Analysis occurs to affect training development. In Step 2, Preparation occurs within the Design and Development of the training product or event. In Step 3, the training product or event is Executed and Implemented as designed and developed. Finally, in Step 4, the training product or event is Assessed and Evaluated for further improvements to meet what was determined in the planning and analysis step. Furthermore, the ADDIE process and the Army Training Management Model form the basis for an integral training development model, known as the 8-Step Training Model (Figure 2).

Both FM 7-0 (U.S. Department of the Army, 2011a) and AE Regulation 350-1 (U.S. Department of the Army, 2005) detailed the 8-Step Training Model. While the 8-Step Training Model does not guide leaders on the development of training, it does provide a progressive checklist approach for planning training across all types of units. The purpose of the 8-Step Training Model is to provide a standard method by which commanders and staffs can organize and record planning progression of unit training. It is a means to effectively use time and resources as training is conducted (U.S. Department of the Army, 2005). Integral to the success of the 8-Step Training Model is the eight progressive steps that start with the actual planning of the training in Step 1. The execution of the training event occurs in Step 6, Execute, in which the all the planning in Steps 1 through 5 come to fruition. Steps 7 and 8 form the capstone of the 8-Step Training Model through an after action review (AAR) and subsequent retraining.

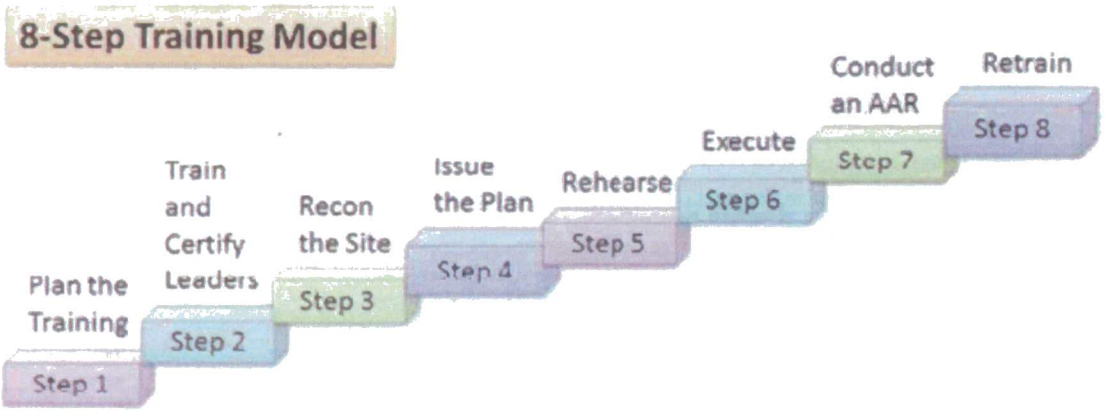

Figure 2. Steps in the 8-Step Training Model.

The eight steps are progressive in nature and lead to effective planning, preparation, and execution of training. In Step 1, Plan the Training, leaders assess mission essential tasks to evaluate training proficiency and shortfalls; develop specific training objectives; allocate time and resources for the training; and specify how the training will be evaluated. In Step 2, Train and Certify Leaders, leaders must ensure that the trainers conduct pre-training preparation and that a clear understanding of the task, conditions, and standards exists. Consequently, the preparation done in Step 2 is substantiated in Steps 3, 4 and 5. In Step 3, Recon the Site, the trainers will coordinate with range control, classroom administrators or any other landowner to preview the location for the training to ensure that it is ready and appropriate for the training event. The trainer will issue the plan in Step 4 which consists of handouts, evaluation checklists, concept sketches, risk assessment and tactical order if necessary. In Step 5, Rehearse, the trainers conduct a rehearsal to ensure understanding, synchronization, and preparation of the plan. Leaders supervise rehearsals to verify that those responsible for the training are prepared to conduct efficient and organized training. The 8-Step Training Model comes to fruition in Step 6, Execute, since this is when the training occurs and evaluation starts. Evaluation is pertinent in Step 7, Conduct AAR. In this step, the trainer and leaders collaboratively conduct an after action review (AAR) to determine what worked and what needs to be improved. In Step 8, Retrain, the leaders must assess if the training met the standards and if a shortfall warrants retraining. The AAR, conducted at Step 7, can provide the information used to aid in the determination of retraining. The 8-Step Training Model was discovered in a review of published regulations and field manuals. However, a complete literature review includes investigating digital libraries, as well, to see what is emerging in training development technology.

Junior leaders strive to determine how best to use emerging technologies and innovative training methods to enhance the effectiveness of training. The literature review of emerging technologies uncovered a vast amount of technical means available for training development which can overwhelm junior leaders in their training development efforts. Centric to the grouping of all these technical training development resources is the ATN, which is available to junior leaders at ATN's website (https://atn.army.mil). The ATN can be accessed by anyone who is registered with the Army Knowledge Online (AKO) website. The homepage contains links that provide junior leaders with training management and training development resources and products. The ATN has a digital link to FM 7-0 in which junior leaders can read and

understand training principles, training management processes, and METL development, all of which are important features in training development. The Collaboration link in ATN's homepage provides a junior leader with collaborative information in the form of an ATN blog, Army Training Forum, ATN newsletters, Ask-a-Trainer, and Knowledge Networks. The Collaboration link allows training developers an outlet in which to share and exchange ideas and best practices regarding any training development issue. Of particular importance is the Ask-a-Trainer link in which a junior leader, who is in the process of developing training, can ask trainers registered with ATN a question involving a training issue.

Additionally, ATN provides links to training development enablers such as the CATS and the DTMS. The CATS has numerous links to training materials which can assist unit training managers develop and conduct training. Providing training materials which reduce planning time remains the number one goal for the CATS. The CATS provides task-based, event-driven training strategies designed to assist unit commanders in achieving training readiness consistent with ARFORGEN, Army unit training guidance, and reporting regulations and doctrine. Specific mission essential tasks (MET) can be searched, based on what is needed in the training schedule. Consequently, a junior leader can enter the task in the search field entitled "Enter Search Term" and select the "Go" button. Search Templates in the CATS relate to individual and collective tasks, and individuals can search and select the tasks that are needed for training. The templates in the CATS outline the tasks to be trained, conditions, standards, evaluation guidance, and safety notes. Moreover, the CATS template displays the task steps and performance measures applicable to the task selected in the template. At the bottom of the template appears a listing of supporting collective and individual tasks that can be used to augment the training at hand. The results of the performance measures in the CATS template are entered into DTMS to track the training status of individuals and units.

The DTMS is a web-based program that facilitates the unit's ability to train and track training. It is in essence a training management tool. The DTMS ties together collective, individual, mandatory, Army Warrior Tasks (AWT), and deployment training in a database that is designed to provide the commander with a snapshot of the unit's training status. The program allows commanders to produce and deliver long-range training calendars, short-range training calendars, training schedules, and installation school schedules. The DTMS currently tracks individual Soldier training results that remain on record in the database until the individual undergoes a permanent change of station (PCS) or leaves the service. It also tracks a unit's training status that depicts the commander's assessment, personnel strength, training schedules, and training highlights at selected time intervals. Leaders can access their workspace in DTMS to determine their unit's mission essential tasks and develop a unit mission essential task list (METL) based on the information provided. The DTMS interfaces with the Army Training Tracking and Resourcing System (ATTRS), the Medical Protection System (MEDPROS), the Army Training Information Architecture (ATIA), the Range Facilities Management Support System (RFMSS) and the Training Ammunition Management Information System-Redesigned (TAMIS-R).

Training enablers discovered in the Army's training development websites, such as the ATN, afford junior leaders with a myriad of information on how to execute training management and development. Nevertheless, the literature reviewed in academic journals pertaining to

training development yielded information in a different light. Emerging technologies became the focal point in training development methods. Instructional design is becoming more customized, informal, just-in-time, and technologically mediated. Therefore, blended learning, coupled with social media learning, is becoming the mainstay of training development initiatives. This paradigm causes instructional systems design practitioners to rethink ways to develop training using these technologies and sell those means to stakeholders (Patel, 2010). The well-known ADDIE model that has been around since the 1950's has matured to be used extensively in training development, yet Neal (2011) believes that ADDIE has gaps when it comes to designing and developing e-learning. The gaps are evident in the Implementation and Evaluation phases, in which the implementation and evaluation of e-learning products constantly flex and update. Nevertheless, analog-based classes essentially remain static and fit best with ADDIE. A new process is emerging called e-ADDIE (Neal, 2011). All the e-ADDIE guidelines are meant to be supplemental to ADDIE and provide another learning solution that facilitates customization of e-learning material. This emerging learning solution is not meant to be the mainstay of junior leader training development efforts, but e-ADDIE should be regarded as a viable means in the future. The key difference between ADDIE and e-ADDIE is in the Design phase. In ADDIE, design entails identifying learning objectives and lessons planning, whereas in e-ADDIE the phase includes flowcharts, storyboards, media utilization, and design interfaces (Neal, 2011). Emerging technologies seem to drive changes to training development processes, and with the advent of social media and e-learning, it appears that traditional training development processes warrant realignment.

Furthermore, the literature review uncovered facts that junior leader training development relies on best practices in areas of adaptive, and innovative training. Adaptive training for junior leaders must include training systems aimed at decision-making, negotiation, team-building, communication, and cultural awareness. Adaptive training depends on a thinking process that hones a junior leader's cultural awareness and metacognitive agility (Raybourn, 2007). Raybourn further asserts that adaptive training must create systems of experiences that foster successful, adaptive thinking. Innovative training development techniques add to training effectiveness, especially among junior leaders. Major P. Kiniery (2008) provides several examples of implementing innovative training solutions. For example, Kiniery changed junior leader training from a METL based on the unit's core capabilities to a METL based on a non-standard mission, because the unit was transitioning from an infantry battalion to a reconnaissance, surveillance, and target acquisition squadron. The change in METL made the training applicable to junior leaders. Furthermore, Kiniery used innovative training techniques to overcome training resource constraints. For example, the unit used BB guns to conduct reflexive fire techniques, which afforded training on a quick fire course without resourcing ammunition. The literature review on how junior leaders used innovative means in training development and execution displayed how certain techniques had a positive effect on training development and training product outcomes.

The literature review encompassed documentation in Army regulations, field manuals, training articles, peer-reviewed academic journals, and web-based resources. Moreover, the review uncovered training development models, methods and enablers, such as the ADDIE process, the 8-Step Training Model, CATS, and DTMS. Textually, various publications such as FM 7-0 and TRADOC Regulation 350-70 proved enlightening material that provided guidance

for junior leaders in their efforts to develop training in operational units. Digitally, the review of the ATN website provided material such as a consolidated database of links to training development resources and collaboration forums to facilitate efficient training development.

Interview/Focus Group Results

The results of the interviews and focus group discussions underscored the need for training development prototype tools that would instruct junior leaders in operational units on effective training development methods and techniques. Additionally, the results indicated the training development procedures that worked best for junior leaders as they planned, prepared, and executed training programs. Overall, the results from content analyses demonstrated 11 thematic categories. A crosswalk of the research questions, the thematic categories of the responses, and the specific responses provided information on how training content development, management, implementation, and assessment occur in operational units (Table 2).

Regarding the availability of training development resources for junior leaders in operational units, the participants mainly agreed that there is so much available, either on websites or in publications, that it is difficult to find and use relevant resources effectively. The main responses focused on digital resources such as DTMS, CATS, ATN, and ArmyStudyGuide.com. Websites included civilian sites, such as Google.com, which was the first site visited by junior leaders to develop their training, while regarding ATN as a subordinate site. The participants stated that a consolidated database of training development materials, job aids and products would be helpful in developing effective training. A current listing of Field Manuals (FM), Technical Manuals (TM), and the Army Training Support Command (ATSC) resource listings, used by SMEs was requested as a necessary resource by the participants.

Responses for how junior leaders develop, manage, implement, and assess effective training in operational units underscored the need to first address the commander's METL, followed by the unit METL for any training event. Furthermore, the participants remarked that checklists, flowcharts and AARs were necessary to develop effective training. The checklists and flowcharts must be located and linked in a consolidated training development database, according to the participants. It is important to note that most of the participants relied on the 8-Step Training Model and supporting methods such as troop leading procedures (TLP) and the MDMP to facilitate training development. Researcher observations during the discussions indicated that the application of the ADDIE model described in TRADOC Pam 350-70 was not mentioned by the participants and that many participants felt relegated to execute training development ad hoc.

Table 2

Content Analysis Results of the Interviews and Focus Groups

Research Questions	Applicable Thematic Summaries	Responses
What is currently available to junior leaders to assist them in developing effective training programs?	• Training Resourcing • Training Products Needed • Training Materials Produced • Training Development Methods • Exemplar Training Development TTP / Products	• Websites • DTMS, CATS, ATN • Need for unified database of training products • Need for new order of FM/ TMs instructed by SME
How do junior leaders develop, manage, implement and assess effective training in the operational unit domain?	• Training Requirements • Training Products Needed • Training Materials Produced • Training Development Evaluation • Training Development Methods • Exemplar Training Development TTP/Products	• Use digital and analog means • METLs (unit and Commander's) • Implement the 8-Step Training Model • Use of checklists and flowcharts • Use of effective After Action Reviews
What specific training development TTPs have proven successful in developing effective training in the operational unit domain?	• Training Development Methods • Exemplar Training Development TTP/Products	• Follow METL development process • Use websites and SME input • Follow the 8-Step Training Model • Use of checklists and flowcharts
What can be provided to junior leaders to overcome training development challenges inherent in the operational unit domain?	• Training Development Methods • Exemplar Training Development TTP/Products • Training Development Challenges with Implementation • Training Products Needed • Training Materials Produced	• More time to develop training • Creation of a centralized training development database • A training development toolkit
What is the definition of training development?	• Training Development Definition	• Found in FM 7-0 • Translating doctrine into reality
What is the definition of training management?	• Training Management Definition	• Found in FM 7-0 • Prioritizing training based on resources and requirements

When asked to provide specific training development TTP or products that could be used to develop a training development tool for junior leaders, the participants could not readily recount any specific training development TTP or products that they have used or created in the past. Participants mentioned that training focused on TLP as Soldiers moved from one training event to the next. Most of the training development TTP derived from on-the-job experiences or in talking with SMEs in certain areas of training development. The participants felt that training development TTP comes from following the METL development process outlined in FM 7-0 and in the 8-Step Training Model. The development of a flow chart or checklist that describes that most feasible way to train a certain task was regarded by the participants as a good TTP to employ.

When asked what could be provided to junior leaders to overcome the challenges of training development in operational units, the participants resoundingly stated that the constraints on time and space were the biggest challenges. Time seemed to be the overriding challenge and issue facing junior leaders in training development, especially as it relates to training requirements in the ARFORGEN cycle. The overriding comment was that there was not enough time to develop training, and that training was conducted urgently. Anything developed and delivered to junior leaders that would help in their training development, while saving time, was a premium request. Similarly, the participants expressed frustration regarding the ad hoc or immediate nature of the training requirements tasked to junior leaders. In summary, unexpected training requirements coupled with a lack of time to develop training were seen as major challenges by junior leaders in developing effective training. For example, a participant remembered that training on a weapons qualifications range was augmented by last-minute "hip pocket" training that had to be executed without prior notice or coordination.

Another predominate challenge was in knowing what, where, and how to best use training development resources. They realized that resources are available but experienced difficulty accessing needed training development materials or products. The participants consistently stated that training resources and products are many and available, and that the best way to mitigate the volume of resources was to create a centralized database of training development materials. The participants also indicated that it was difficult to obtain the training development tools in the DTMS. They stated that DTMS was not intuitive enough to use effectively and quickly. These challenges generated the request to have a centralized training development database from which to select and use specific training development resources.

Researcher observations noted that, although the ATN is the main website available to junior leaders to discover specific training development products in a central database, it seemed that the participants wanted to rely on general searches of the Internet (e.g., using Google.com) for training development resources. That is, although the junior leaders knew about ATN, they did not access this site initially for their training development needs, but rather felt more comfortable searching the Internet more generally, because of ease of access.

It also is important to note that the literature review supports the assertion that there is a proliferation of web-based training development products and resources; so much so that it is difficult to find what is needed for effective training development. Furthermore, it appeared that the overriding issue was that a lot of training development resources exists, to such an extent that

a junior leader spends an inordinate amount of time searching for the right training product and then fails to produce an effective training event or product for lack of time. General Dempsey stated that, "time is the scarcest resource in training and building readiness" (Dempsey, 2009, p. 14). General Chiarelli (Ret.) substantiated General Dempsey's comment as he stated, "unfortunately the one resource we cannot buy more of is time" (Chiarelli, 2009, p. 19). Finally, many of the participants indicated that they were not given the opportunity to develop training without constraints. In general, they felt that training development was preset and confined to set procedures.

Regarding the participants' understanding of training development and training management principles, the participants often discussed training management principles when they were actually talking about training development issues. The terms were often used interchangeably, and the participants suggested that training development and management must interface seamlessly. Additionally, the participants reported different training development methods and outcomes for TRADOC and FORSCOM. Participants felt frustrated as they perceived that TRADOC standards in training development ran contrary to FORSCOM requirements. Notably, most of the junior leaders who participated in the present research had not received any formal Army training development instruction in their required professional courses. Most of the training development instruction was gained either through on-the-job instruction or ad hoc advice by those who had previously worked in the Army educational system.

Summary

The front end analysis in this research consisted of a literature review, interviews, and focus group discussions. That effort provided insights on how to best develop training products in operational units. In summary, the following findings are of note from the literature review, interviews, and focus groups:

- Junior leaders felt there was not a clear distinction between training development principles and training management principles within FM 7-0, unit METLs, or guidance on applying resources (time, people, funds and land),
- Difficulty existed in selecting and finding training development products readily because of the proliferation of web-based training development products and resources,
- Two commands and their guiding documentation exist in training development: TRADOC (guided by TRADOC Pam 350-70) and FORSCOM (guided by AR 350-series documentation). Training development methods and training outcomes differ between TRADOC and FORSCOM,
- Junior leaders received very little training development instruction in their units (when, where, and type),
- Time is the overall resource in short supply, pertaining to training development in operational units,

- The CATS is the key enabler that provides information and structure in developing training,

- The 8-Step Training Model is the key training development method used by junior leaders in operational units, as discovered in FM 7-0 and AR 350-1, and

- ATN, while not widely recognized, is a key Army website to link training development products and materials for use by junior leaders.

Of particular importance to the present research, participants consistently felt that a tool that gave them quick access to pre-set training classes and other resources would save time and be helpful. Furthermore, the results of the literature review and interview/focus group discussions substantiated the need for a training development prototype tool. The Junior Leader Training Development Tool (JLTDT), as described in the next section of this report, was designed to be one approach to provide a central database of information needed for training development. Details of the use and application of the prototype tool can be found in Appendix A. A CD is enclosed with the source code for the prototype tool. The source code is written in Visuals Studios 2008. The CD also includes the back-up files, images, and links to the various job aids in the tool. The prototype tool was coordinated with the ATN (https://atn.army.mil), and ATN website developers incorporated some of its content into the ATN website. The website contains a myriad of training development material and products that facilitate training management and development. The ATN website is constantly updated in order to accurately reflect Army doctrine, and discussion boards present effective TTP and best practices.

Junior Leader Training Development Tool (JLTDT) Overview and Evaluation

The front end analysis results were applied to the development of the JLTDT. Furthermore, the JLTDT was revised based on the feedback from training developers and Army leaders at Fort Leavenworth, Kansas, and Fort Benning, Georgia, respectively.

The JLTDT was built around six instructional modules comprising four interactive and two informative links. The main module consists of an interactive tool that follows the 8-Step Training Model (see Appendix A). Other supporting modules consist of a central database of training resources and planning tools, a training archive of best-practices programs, and several training development training aids that are downloadable and printable. The focal training development process in the JLTDT is the 8-Step Training Model, with supporting training development processes described in the ADDIE Model, MDMP, and TLP. The doctrinal foundation for the JLTDT is found in FM 7-0 (U.S. Department of the Army, 2011a).

JLTDT Formative Evaluations Background and Results

Formative evaluations were conducted to obtain feedback from SMEs regarding revisions that needed to be made to the tool. The participants in the formative evaluations were six training developers from ATN and instructors from a TRADOC schoolhouse (four captains and four senior NCOs). All participants in the formative evaluations were selected based on their extent of training development experience and knowledge. The ATN training developers were

asked to comment on whether the tool met its research objectives while the TRADOC instructors were asked to comment on the practicality and usefulness of the tool. Participants were first shown either a live version of the tool or screenshots and asked to comment on each section of the tool. Then, participants were asked to write any additional comments regarding each module in a questionnaire. The questionnaire also asked them to rate each module on content, design, and ease of use.

Feedback from the ATN training developers focused on what is doctrinally sound and needed for junior leaders in training development. The comments stemmed from discussion boards and interviews from Soldiers in the Army who are involved in training within operational units. The outcome from the feedback entailed a shift of emphasis of training development processes in the JLTDT, in which a shift went from focusing on the ADDIE process to focusing on the 8-Step Training Model.

Feedback from the TRADOC instructors focused on making the JLTDT more helpful and adaptable for junior leaders, specifically NCOs. The main comments centered on the interactive sections of the tool and the database interfaces. The content and design of the tool received favorable comments.

Refinements to the JLTDT

Refinements to the Junior Leader Training Development Tool were based on numerous comments that increased the effectiveness of the tool for training development in operational units. The refinements entailed:

- Shifted the emphasis in training development processes from ADDIE to the 8-Step Training Model in the JLTDT,
- Restructured the doctrine-based job aids in the TD Quick Reference Card Module,
- Streamlined information in the modules. Reformatted bullet comments,
- Included a printable 8-Step Training Model worksheet template before the interactive text fields in the Junior Leader TD Processes Module to serve as a guide,
- Added "Help" buttons in the interactive text fields that involve risk assessment steps, CATS functions, and AAR steps to provide more information and additional publications,
- Enabled users to immediately print each page of the interactive text fields in the 8-Step Training Model after saving to the database,
- Added a point of contact (POC) text field box as part of the Coordination steps in the 8-Step Training Model interactive worksheet, and

- Refined database outputs in the Training Archive Module so that each training plan lists the plan name, developer name, and applicable MOS to aid users in searching for information.

Conclusions and Recommendations

Conclusions

The goal of this research project was to develop a detailed understanding of training development in operational units at the BCT level. The outcome of this research was to develop a prototype tool (the JLTDT) that instructed junior leaders in the processes of training development and provided training development job aids to assist in developing effective training products. The JLTDT was designed and refined based on what the user, the junior leaders in this case, desire in a training development tool. The JLTDT is an interactive training development tool that consists of a central database of training resources and training plans posted by junior leaders and a checklist of training development steps seen in the 8-Step Training Model. Moreover, the ATN is an integral training management and development website for the Army and some of the JLTDT content will reside on the ATN site.

Future Research Recommendations

Researcher observations indicated that the participants did not use social networking sites, such as Facebook, Twitter, or SharePoint, to share training development ideas, job aids or products. Research that addresses the advantages and disadvantages of using social media networking sites in training development efforts would be helpful for junior leaders. It appears that technology supporting social networking, especially mobile devices, could be explored, as it applies to training development in operational units (TRADOC, 2011b). The viability of using mobile devices, such as ANDROID i-phones, tablets and other touch-screen mobile applications, to support training development, management, and assessment warrants future research.

Additionally, knowledge of how junior leaders in National Guard/Reserve Component (NG/RC) units conduct training development in relation to junior leaders in active Army operational units would afford insights on how to standardize the training development processes across all the operational forces. This is especially important for all operational forces in the ARFORGEN process, which includes NG/RC units undergoing the reset and train/ready phases. A recent General Accountability Office (GAO) report alluded that, "The Army's force generation model calls for smaller reserve-component units to train for both ongoing and full-spectrum operations, but the Army has not finalized its training strategy for these reserve-component forces" (Pickup, 2010, p. i).

Finally, the lack of the ADDIE process in operational units in training development raised questions. Is the ADDIE process anachronistic? Is ADDIE solely a TRADOC process? What can be done to fuse the gap of ADDIE process usage and the 8-Step Training Model in operational units? Research of the ADDIE process in training development in operational units would produce findings that would answer the above questions. The exact application of the ADDIE process aids the front end analysis that must occur to develop training programs and forecast training schedules. An effective analysis may lead to a training program design that

meets the requirements set forth by the commander to meet the unit's training needs. The ADDIE process is integral to training development because it affords the foundation necessary to implement training and the subsequent evaluation of a particular training event. Other training processes used by junior leaders depend on precepts inherent in the ADDIE process.

References

Chiarelli, P. W. (2009, August). Training full spectrum: Less is more. *Army, 59*(8), 19-21.

Dempsey, M. E. (2009, June). Training development for an expeditionary army. *Army, 59*(6), 14-16.

Kiniery, P. (2008). *Innovative training: Getting the job done. Army Training Network Training Solutions.* Fort Leavenworth, KS: Collective Training Directorate. Available online at https://atn.army.mil/dsp_TS.aspx

Neal, B. (2011, March). e-ADDIE! *T&D, 65*(3), 76-77.

Patel, L. (2010, December). Instructional systems design in an on-demand world. *T&D, 64*(12), 42-44.

Pickup, S. (2010). *Military training: Army and Marine Corps face challenges to address projected future requirements.* (U.S. Government Accounting Office Report, GAO-10-720). Washington, DC.

Raybourn, E. M. (2007). *Training approaches for honing junior leader adaptive thinking, cultural awareness and metacognitive agility.* I/ITSEC 2007 Proceedings, Interservice/Industry Training, Simulation and Education Conference Proceedings, November 26-29, Orlando, FL.

U.S. Department of the Army. (1999). *Systems approach to training management, processes, and products* (Draft TRADOC Regulation 350-70). Fort Monroe, VA: Author.

U.S. Department of the Army. (2009). *Army training and leader development* (AR 350-1). Washington, DC: Author.

U.S. Department of the Army. (2010). *The operations process* (FM 5-0). Washington, DC: Author.

U.S. Department of the Army, (2011a). *Training units and developing leaders for full spectrum operations* (FM 7-0). Washington, DC: Author.

U.S. Department of the Army. (2011b). *The U.S. Army learning concept for 2015* (TRADOC PAM 525-8-2). Fort Monroe, VA: Author.

U.S. Department of the Army. (2011c). *The U.S. Army training concept, 2012-2020* (TRADOC PAM 525-8-3). Fort Monroe, VA: Author.

U.S. Department of the Army, Europe and the Seventh Army. (2005). *Training in the Army in Europe.* (AE Regulation 350-1), Heidelberg, Germany: Author.

Appendix A

Junior Leader Training Development Tool

The purpose of the Junior Leader Training Development Tool (JLTDT) is to provide junior leaders with a means to understand training development and, in turn, develop quality instruction, training materials and programs. The focus of the JLTDT is with operational units at the BCT level, and applies to Army Soldiers in the ranks ranging from staff sergeant (E6) to captain (O3). The duty positions that can primarily use the JLTDT include military occupational specialties in the areas of operations, training management, and training development.

The JLTDT was built around six instructional modules comprised of four interactive and two informative links. The main module consists of an interactive tool that follows the 8-Step Training Model. Other supporting modules consist of a central database of training resources and planning tools, a training archive of best-practices programs, and several training development training aids that are downloadable and printable. The focal training development process in the JLTDT is the 8-Step Training Model, with supporting training development processes described in the ADDIE Model, MDMP Model, and TLP. The doctrinal foundation for the JLTDT is found in FM 7-0 (U.S. Department of the Army, 2011). The initial prototype tool was coordinated with the Army Training Network (ATN) at https://atn.army.mil, and ATN website developers incorporated some of its content into the ATN website. A CD is enclosed with the source code for the initial prototype tool. The source code is written in Visuals Studios 2008. The CD also includes the back-up files, images, and links to the various job aids in the tool.

The JLTDT includes links that hold various sub-links within each module. The user can access the sub-links by clicking on the "+" button next to each module. The main interactive module that enables training development is in the Junior Leader TD Processes Module, seen on the left-hand side of the tool in a treeview panel. Entries in this module populate a database discovered in the Training Archive Module. The informative modules that support training development consist of the Training Database & Resources and the TD Quick Reference Card Modules.

The JLTDT Home Module. This module consists of two sub-links that describe the background of the JLTDT and a "How To Use" outline that presents the functions of each module (Figure A1). Consequently, the Background Information sub-link expands on the purpose of the tool, its highlights, and the doctrinal foundation for the JLTDT. The "How To Use" sub-link presents instructions on how to employ each module to assist in the training development process. The "How To Use" sub-link can be accessed any time during work in other modules.

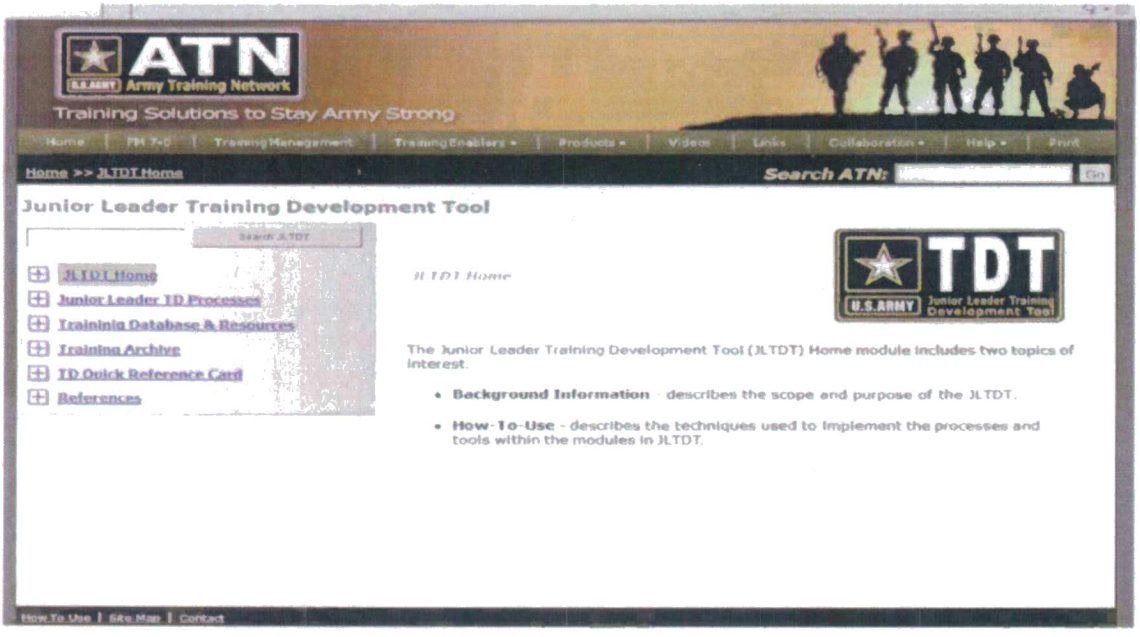

Figure A1. The Junior Leader Training Development Tool's (JLTDT) homepage consisting of six modules listed in a treeview format on the left side of the page.

The Junior Leader TD Processes Module. A junior leader will use the Junior Leader TD Processes Module to complete a step-by-step training development process (Figure A2). The Junior Leader TD Processes Module emphasizes three foundational training development processes for junior leaders in operational units. The mainstay process, in this case, is the 8-Step Training Model. The sub-steps within the model serve to guide a junior leader in their training development effort in the unit. On the main page of the module, it includes a template of the 8-Step Training Model as a guide for junior leaders as they complete the steps in the 8-Step Training Model in this module. The other processes that relate to the sub-steps in the 8-Step Training Model involve the eight steps in the TLP process, various steps in the ADDIE process, and in the MDMP.

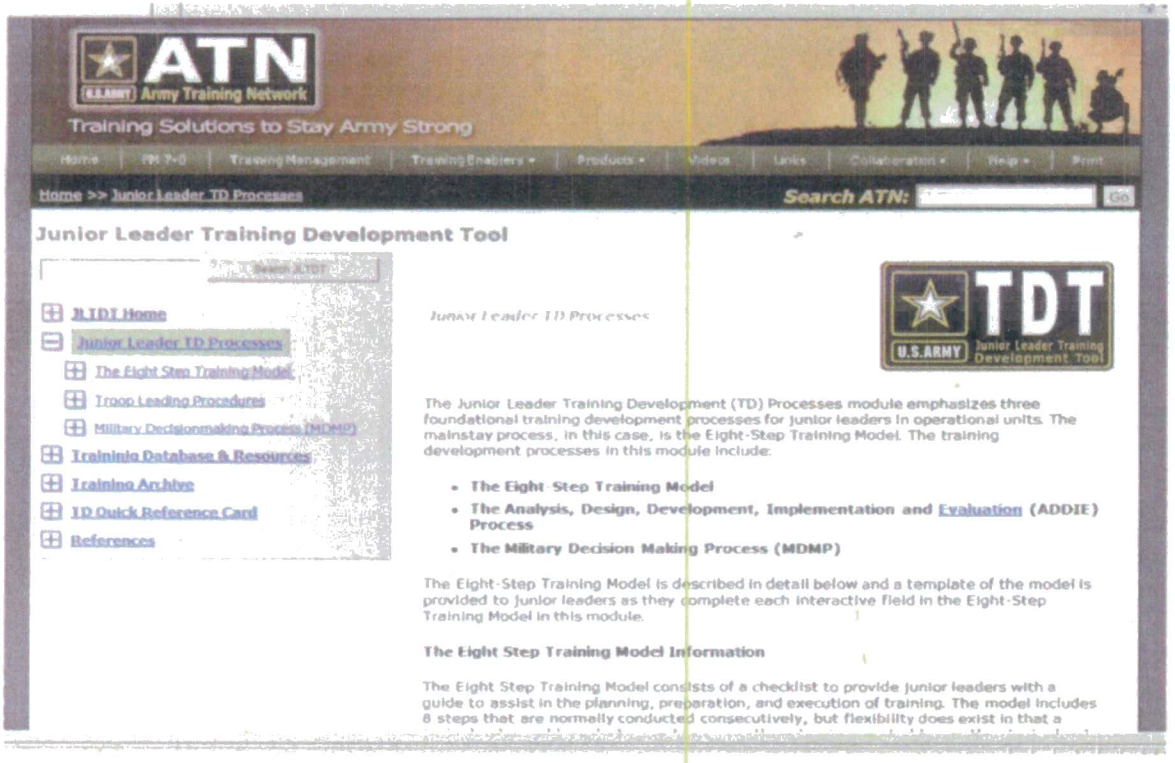

Figure A2. The Junior Leader TD Processes Module presents three training development processes to assist in developing training.

All of these training development processes known in the Army provide insight on how to plan, prepare and execute training efforts at the operational unit level. Interactivity occurs as the junior leader completes each text field in the 8-Step Training Model in order to design and develop a class or training event for the unit (Figure A3). In the first step of the model, the junior leader has the means to access the CATS link to gain information regarding the task, conditions, standards, resourcing, and training and evaluation outlines (T&EO). Subsequently, the junior leader can input that information in various text boxes in the module.

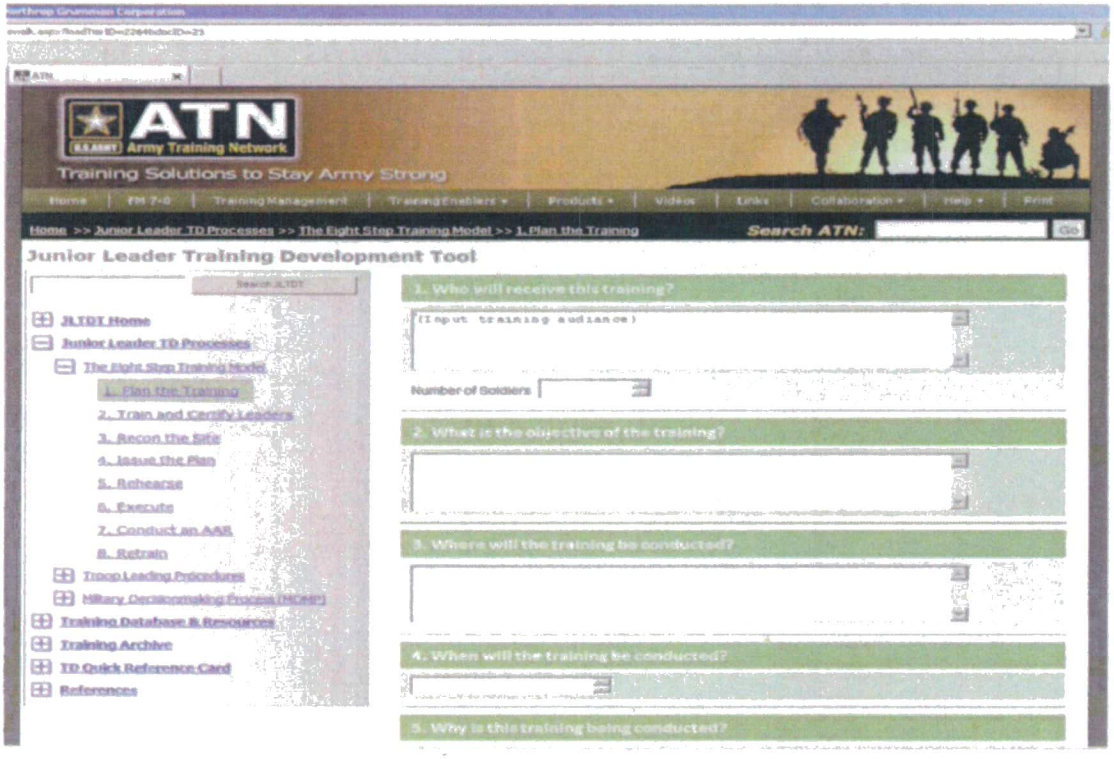

Figure A3. Example of interactive text boxes in the 8-Step Training Model.

Once the 8-Step Training Model is completed and all fields addressed, the junior leader will submit that page which will be forwarded to the Working TD Programs sub-link in the Training Archive Module. At that point the junior leader's training plan populates a database which is available to the user to revise, print, or email to necessary mail recipients. Furthermore, the plan is available to any other junior leader for use in training development in this archived module.

The Training Database & Resources Module. A junior leader can use this module to download and access various website links and resources that will aid in the training development effort (Figure A4). The module Links section includes training enabler links found in ATN. The links include such enablers as the CATS, DTMS, FM 7-15 Army Universal Task List (AUTL), and the Army Warrior Tasks (AWT) listing. The Links section in the Training Database & Resources Module seeks to be a central repository of training development and management enablers for junior leaders. As future training enablers are posted to ATN, those enablers would likewise list in this module.

Furthermore, the Resources section of this module is a listing of various websites that are used by NCOs, company commanders, and training staffs, not linked directly to ATN (Figure A4). In the same manner as the Links section, this section is a "living" repository of additional website and resource links that assist the junior leader in training development. Moreover, the Resources section includes websites that present pre-set classes and in-depth instructions on developing graphic training aids and devices. Such websites as ArmyToolBag.com and ArmyStudyGuide.com are listed in the Resources section and those websites provide useful training products that aid a junior leader in training development. Specific websites such as NCOnet.com and CompanyCommand.com offer training materials that facilitate training development. Those websites are listed in the Resources section. Instructional information regarding the purpose and use of ADDIE is linked in the Resources section, which provides a junior leader with knowledge about that process. Additional resources can be added to the Resources section by submitting the website link to ATN to be vetted then added to this module.

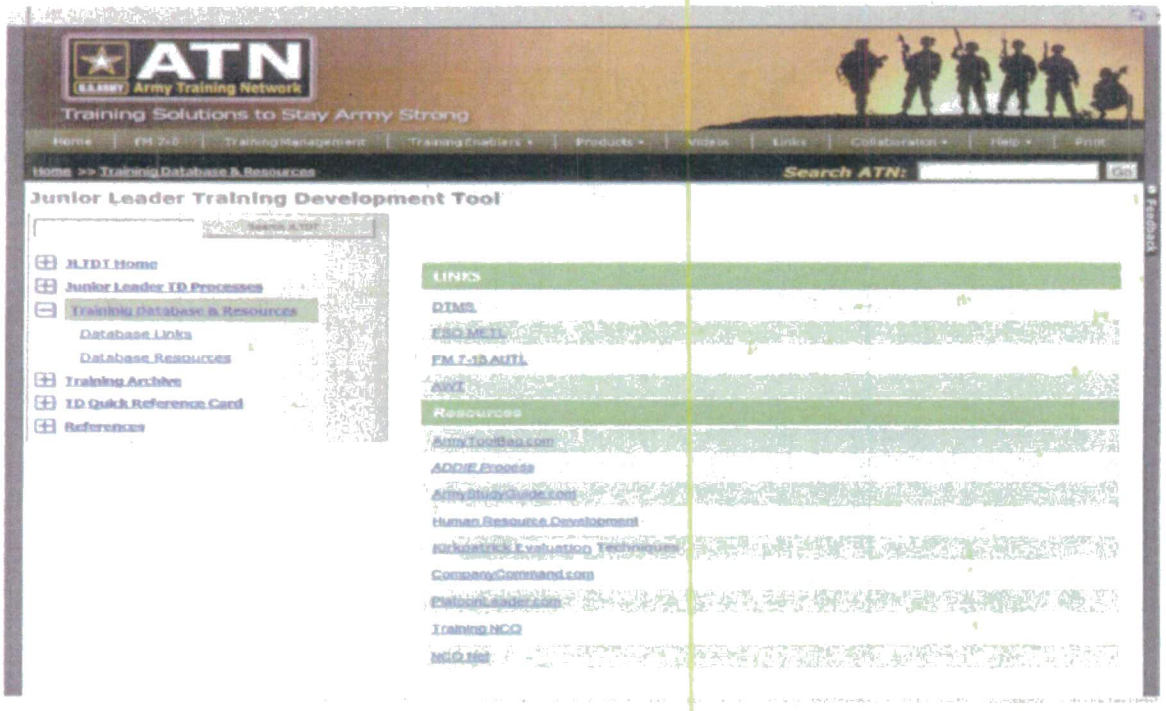

Figure A4. The Training Database & Resources Module is a central repository of training development materials.

The Training Archive Module. The Training Archive Module consists of two sub-links that store working training development programs or active training development materials from the field (Figure A5). The Working TD Programs sub-link consists of a database that is driven from input at the Junior Leader TD Processes module. A junior leader will go to the Working TD Programs to access finished or working training products that either they or another junior leader executed. Any finished training product listed in the database can be printed or downloaded by the junior leader for use.

The Active TD Materials from the Field sub-link in the Training Archive Module includes vetted training development materials such as job aids, classroom instructional materials, and best practices TTP. The main page of the Training Archive Module includes a "Submit a Product" button that allows a junior leader to submit useful and applicable training products that populate and list in the Active TD Materials from the Field sub-link. That submission is sent to ATN to be vetted before placement in the JLTDT.

The TD Quick Reference Card Module. This module provides various tools and informative material designed to assist junior leaders in training development (Figure A5). Three pertinent job aids are listed currently in the module, but other job aids can be added under the Active TD Materials from the Field sub-link and submitted from that module to be vetted by ATN website administrators. The informative job aid is the TD Processes Cross Reference Guide. This job aid displays the relationship among various training development methods and processes current in Army training development and management. Moreover, the guide can be enlarged and explored further with informative "pop-up" displays of each item. The second job aid listed is the 8-Step Training Model worksheet. This worksheet acts as a template that describes each step and sub-steps inherent in that training development model. The last job aid listed consists of a completed 8-Step Training Model worksheet, which provides an example of how the worksheet appears once it is completed. The example used in the completed 8-Step Training Model was a land navigation class.

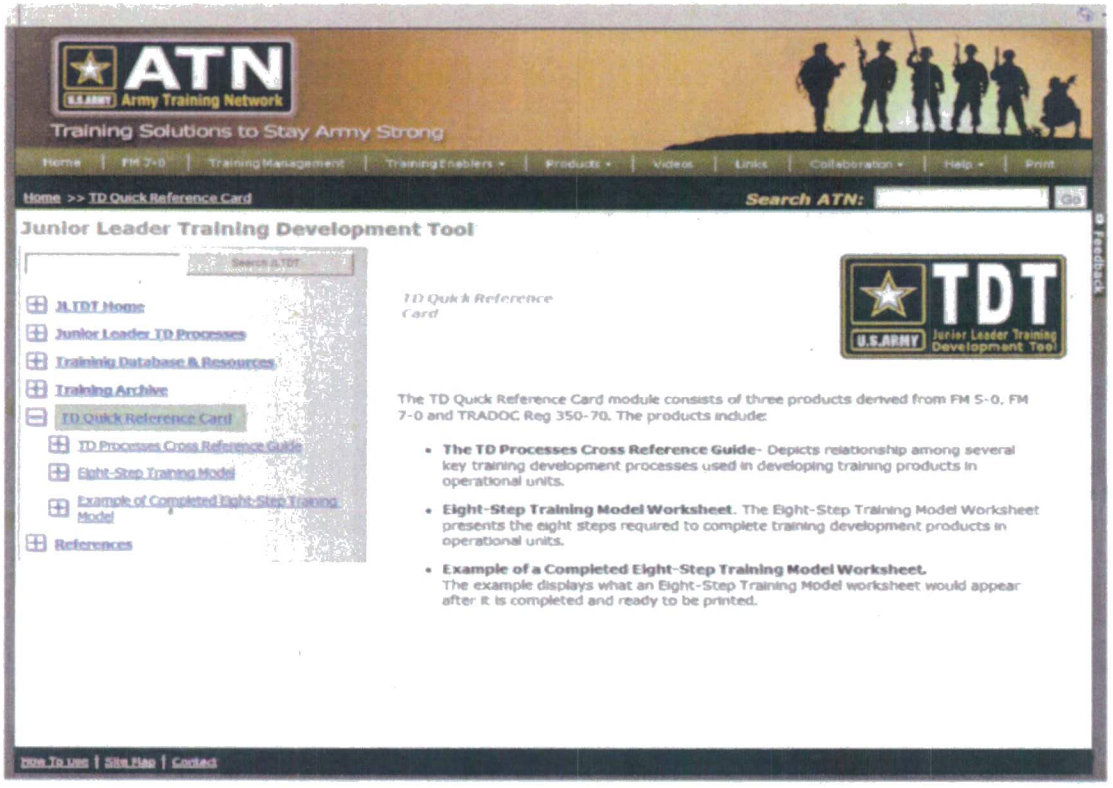

Figure A5. The TD Quick Reference Card Module consists of three job aids that provide tools and information to assist in training development.

Appendix B

Acronym List

AAR	After Action Review
ADDIE	Analysis, Design, Development, Implementation, and Evaluation
AE	Army in Europe
ARFORGEN	Army Force Generation
AKO	Army Knowledge Online
AR	Army Regulation
ASAT	Automated Systems Approach to Training
ASTD	American Society for Training and Development
ATIA	Army Training Information Architecture
ATN	Army Training Network
ATSC	Army Training Support Command
ATTRS	Army Training Tracking and Resourcing System
AUTL	Army Universal Task List
AWT	Army Warrior Tasks
BCT	Brigade Combat Team
CATS	Combined Arms Training Strategy
DTMS	Digital Training Management System
GAO	Government Accounting Office
HBCT	Heavy Brigade Combat Team
JLTDT	Junior Leader Training Development Tool
MDMP	Military Decision-making Process
MEDPROS	Medical Protection System
MET	Mission Essential Task
METL	Mission Essential Task List
MOS	Military Occupational Specialty
NCO	Noncommissioned Officer
NG	National Guard
PCS	Permanent Change of Station
POC	Point of Contact
RC	Reserve Component

RFMSS	Range Facilities Management Support System
SME	Subject Matter Expert
SAT	Systems Approach to Training
TAMIS-R	Training Ammunition Management Information System-Redesigned
T&D	Training Development
T&EO	Training and Evaluation Outlines
TLP	Troop Leading Procedures
TM	Technical Manual
TRADOC	Training and Doctrine Command
TTP	Tactics, Techniques and Procedures